ZAS2100 Double-pair G.SHDSL Modem

User Guide

(Version 1.0)

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1. Overview

FBDSL1000 Series ZAS2100 G.SHDSL Modem is a high quality and good performance SHDSL device with standard E1/10BaseT interfaces integrated. Its transmission distance can be up to 8Km on 26AWG twist pairs. PDH and HDSL are the normal solution to cover the distance. But PDH is a device based on costly fiber and HDSL is designed for two pair wire, which is easy to cause ISI(Inter-Symbol Interference) and certain resource waste. ZAS2100 is a device to solve above problems. It is designed with 16TC-PAM code and can use one or two pairs wire system according to ITU-T G.991.2 and ITU-T G.994.1, which can improve the transmission performance and economize resource. As the new generation product, ZAS2100 has not only the technical advantage but also very simple installation and maintenance procedure at the same time. It is the best solution for the customers.

2. Features

- New generation SHDSL technology, maximal transmission speed 4Mbps.
- Two pair wire, various speed and extended transmission distance.
- The transmission distance can extend to 5km with 0.4mm (AWG26) when the transmission speed on wire is under 2Mbps.
- 10/100Base-T interface accordant with standard IEEE802.3 and 1Mbytes buffer inserted.
- MAC address list inserted and 4096 MAC address available.
- E1 interface accordant with standards as ITU-TG.703、G.823 and G.742.
- Various speed for E1and V.35 interfaces. N*64Kbps is available。
- Easy to install and operate. Working preferences by DIP switch and no requirement for software control.
- Using 16TC-PAM Code to reduce ISI and to improve the transmission performance.
- Support LT/NT selection

3. Specification

3.1. Line Interface

Rate：192Kbps~ 2048Kbps—Single Pair
384Kbps~ 4640Kbps—Double Pair
Distance: 3.8~4Km Single Pair
5.2Km Double Pairs
Impedance：135Ω

Code： 16TC—PAM

3.2. E1 Interface

Speed：Framed
Code：HDB3
Impedance：Unbalance 75Ω、Balance 120Ω
Standard：ITU-TG.703、G.704、G.823 and G.742

3.3. Power

DC input: 15V/700mA
Power<=6W

3.4. Size

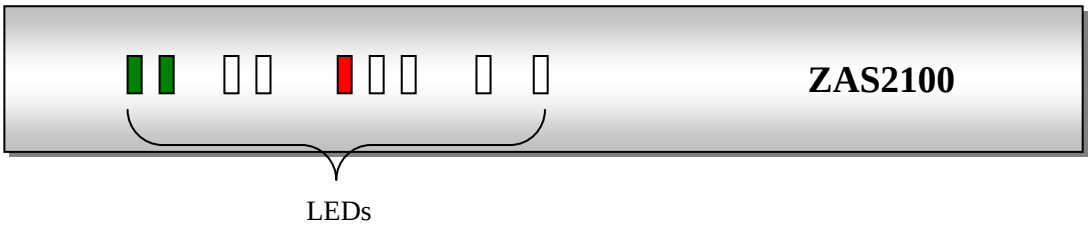
292mm(width) × 224mm(deep) × 46mm(high)

3.5. Working Condition

Work Temperature：0～50℃
Humidity：5%～90%(non-condensing)

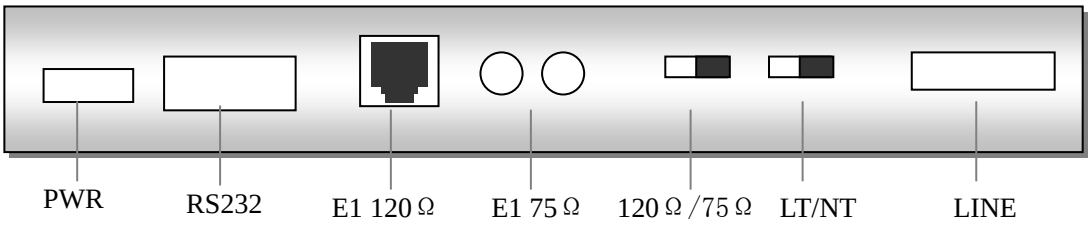
4. Panel

4.1. Front Panel



See table1 to get detailed description.

4.2. Back Panel



See table2 to get detailed description.

4.3. LED Description:

Table1 LED Description

LED	Status	Description
PWR	ON & Green	Power supply OK
LT	ON & Green	Remote End Working Mode
	OFF	Local End Working Mode
E1	ON & Red	E1 Line Is Down
	ON & Yellow	Alarming
	OFF	E1 Line runs OK
CLK	ON & Green	Clock synchronization
	ON & Red	Clock loss of synchronization
	OFF	Line Is Down
BER	ON	Bit error is over threshold
	OFF	No bit error
L1	ON & Green	Line1 Is OK
	ON & Red	No Signal Or Missing
	ON & Yellow	Synchronization Missing
	OFF	Line1 Is Down
L2	ON & Green	Line 2 Is OK
	ON & Red	No Signal Or Missing
	ON & Yellow	Synchronization Missing
	OFF	Line 2 Is Down
LOOP	ON & Green	Blinking Slowly (5 Seconds one time). The System Is OK
		Blinking Quickly, Loading firmware
	ON & Yellow	Blinking Slowly, In Loop Status
	OFF	No Loop, The System Is OK
Alarm	ON & Red	Blinking, Serious Alarm
	ON & Yellow	Blinking, Normal Alarm
	ON & Green	Blinking, tiny Alarm
	OFF	No Alarm

4.4. Interface Description:

Table2 Interface Description

INTERFACE	Description
Power	The Power Supply Input, -48DC
RS232	Management Interface
120ohm RJ45	120ohm impedance E1 Balance Interface
75ohm BNC	75ohm impedance E1 Unbalance Interface
120ohm/75ohm switch	E1 Impedance Choose
LT/NT switch	Local End/ Remote End Choose, Local End Is LT, Remote End Is NT

Protected Ground	Protected Ground Connected
LINE	DSL connector. L1 Is Line 1 ,L2 Is Line 2,When two Units Connect, L1,L2 Must connect corresponding

5. Installation

5.1. Configure Chart For Reference

ZAS2100 has two work modes. Single-pair work mode and Double-pair work mode, The default is Double-pair work mode , and can be choose by the software configuration, We recommend the Frame and Clock choose the default configuration. If needed, can change the configuration by software.

CONFIGURATION CHART				
Configuration	**Single Pair Working Mode**		**Double Pair Working Mode** (Default Configuration)	
Local/Remote End Choose	Local End	Remote End	Local End	Remote End
Line Choose	L 1	L1	L1, L2	L1,L2
Power Supply Choose	None Power Supply	Power Supply	None Power Supply	Power Supply
120ohm/75ohm Choose	120ohm/75ohm	120ohm/75ohm	120ohm/75ohm	120ohm/75ohm
Framed/Unframed Choose	Unframed(Default)	Unframed(Default)	Unframed(Default)	Unframed(Default)
Clock Trace Mode	Trace Uplink local End	Trace DSL Line	Trace Uplink local End	Trace DSL Line

5.2. Installation Step

1) Connect Protect Ground of the two DSL equipment to the Earth;
2) Choose single-pair or double-pair work mode from the console management system. The default is double-pair mode.
3) Select LT or NT of the equipment. Note, the local end should be set to LT, the remote end should be set to NT.
4) Connect L1 of the local equipment to the L1 of the remote end. If use two pairs mode, connect L2 of the local equipment to the L2 of the remote end too.
5) Select 75ohm or 120ohm of the E1 port, and connect E1 port.

120ohm E1 port definition:

PIN 1, 2 are TX, PIN 4, 5 are RX. The other is Not Available.

6) Connect Power Supply. The equipment uses -48VDC power supply, and note the polarity of -48VDC. The local end equipment's power can be provided by the remote equipment, so the local equipment may not need power.
7) Power ON the device, If all the thing is right, you can see:

PWR led appears ON;

All the LED Flash once from left to right;

LT of the Local equipment is ON;

LOOP Flashes quickly for about 3 minutes, then changes to flash slowly(once per 5 second);

CLK becomes RED first, after L1 turns yellow, CLK changes to green;

L1 & L2 turns to RED first, then L1 becomes yellow, then L2 becomes yellow. After some time L1 turns to Green, then L2 turns to Green. This means LINE1 and LINE2 work OK.

For the normal working, the LEDs status is list as below:

PWR: GREEN ON; LT: GRREN ON or OFF; E1: OFF

CLK: GREEN ON; BER: OFF L1, L2: GREEN ON;

LOOP: GREEN BLINK; ALARM: OFF

6. Order Information

Model:

FBDSL1000 G.SHDSL Modem

P/N:

ZAS2100 E1 Interface, Standalone, AC power supply